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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,886	04/05/2004	Christian E. Gruber	IVGN 178.1 CON	3859

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EXAMINER	
TUNG, JOYCE	
ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/816,886	GRUBER ET AL.	
	Examiner	Art Unit	
	Joyce Tung	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *54-123* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *54-123* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The response filed 9/05/06 to the Office action has been entered. Claims 54-123 are pending.

1. Claims 54-111, 113, 114, 116, 118-119 and 121-122 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Spinella et al. (5,968,784, issued October 19, 1999).

Spinella et al. disclose a method of identifying gene expression patterns in mRNA populations (See the Abstract). The method involves preparing double-stranded cDNA from an mRNA using a primer, cleaving the double stranded cDNA with a first restriction enzyme at a site within the cDNA sequence and not within the primer and inserting the cDNA into cloning vector (See column 5, lines 37-55). The primer used to prime cDNA has a cleavage site for a priming restriction endonuclease (See column 6, lines 4-7). The primer of Spinella et al. is immobilized to a biotin/avidin magnetic bead (See fig. 2). This teaching is inherent that the primer has ligands and cleavage sites. The priming restriction endonuclease is *NotI* (See column 6, lines 22-21). The reverse transcriptase is MMLV-H-RT (See column 16, lines 62-64). The solid support is magnetic beads (See fig. 2). The sticky end is a *NotI* sticky end and the vector has a *NotI* compatible end and a blunt end (See fig. 2). The vector can be plasmids (See column 11, lines 13-16).

Spinella et al. also discussed that a cDNA copy of mRNA is made using a polydT primer, which is then biotinylated. The biotinylated cDNA is then bound to streptavidin beads to remove the rest of the sequence (See column 4, lines 7-14) in the method of SAGE.

Spinella et al do not explicitly disclose the primer-adapter nucleic acid molecule. Since the primer-adapter nucleic acid molecule is not defined in the specification, the teachings of the primer of Spinella et al. meet the limitations of the primer-adapter as claimed.

Spinella et al also do not disclose contacting one or more of the cDNA molecules with at least one hapten to produce one or more hapten-cDNA molecule complex. However, as claimed in claims 110, 113,118, and 121 hapten is avidin or streptavidin. The discussion of Spinella et al. above meets the limitations of the claims.

Further Spinella et al do not disclose the method step order as claimed, for example, in claim 54, the cDNA molecule is contacted to hapten bound to solid support and then the cDNA is cleaved. However, the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results (In re Burhans, 69 USPQ 330; CCPA 1946) - see, e.g., MPEP 2144.04 (d).

Spinella et al. do not explicitly disclose the cleaved cDNA molecule comprising one sticky end and one blunt end.

Spinella et al. disclose that T4 DNA polymerase is used to generate blunt ends.

One of ordinary skill in the art would have been motivated to apply the method of Spinella et al. to make one or more cDNA molecule because the method of Spinalla et al. allows mRNAs detection with low copy number, permits the generation of global gene expression profiles in a reasonable length and time (See column 5, lines 5-20). It would have been prima facie obvious to make one or more cDNA as claimed.

The response argues that Spinella et al. fail to disclose a cDNA molecule with a hapten. The response also indicates the definition regarding the primer-adapter nucleic acid in the specification. Based upon the definition of the primer-adapter nucleic acid in the specification and the teachings of Spinella et al. set forth above, the teachings of Spinella et a. satisfy ~~with~~ the limitations of the primer-adapter nucleic acid, for example, Spinella et al. disclose that the primer is immobilized to a biotin/avidin magnetic bead (See fig. 2) and the primer used to prime cDNA has a cleavage site for a priming restriction endonuclease (See column 6, lines 4-7). This teaching is inherent that the primer has ligands and a cleavage site.

The response further argues that Spinella et al. fail to disclose the use of only a single enzyme to cleave the cDNAs – hapten complex at sites within a primer-adapter. However, as disclosed, the primer used to prime cDNA synthesis consists of an oligo dT sequence linked at the 5' end of said oligo dT sequence of a cleavage site for a "priming" restriction endonuclease (See column 6, lines 4-11). Therefore, the teachings of Spinella et al. satisfy the limitations of the claims, i.e. a single enzyme is used to cleave the cDNAs – hapten complex at sites within a primer-adapter. Thus, the rejection is maintained.

2. Claims 112, 115, 117, 120 and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spinella et al. (5,968,784, issued 10/19/1999) as applied to claims 54-111, 113, 114, 116, 118-119 and 121-122 above, and further in view of Ando et al. (Journal of Clinical Microbiology, March 1997, Vol. 35(3), pg. 570-577).

The teachings of Spinella et al. are set forth in section 1. Spinella et al. do not disclose using SuperScript reverse transcriptase in the method.

Ando et al. disclose a one tube- RT-PCR method that permits routine amplification of the 3-kb region of genetically distinct SRSV strands present in low concentrations in stool samples (See pg. 570, column 2, second paragraph). The key element of the method is that first strand cDNA is synthesized with SuperScript II version of Rnase H^- Moloney murine leukemia virus reverse transcriptase (See the Abstract).

One of ordinary skill in the art would have been motivated to modify the method of Spinella et al. by applying reverse transcriptase, SuperScript because Ando et al. disclose the method which uses reverse transcriptase, SuperScript permits routine amplification of the 3-kb region of genetically distinct SRSV strands present in low concentrations in stool samples (See pg. 570, column 2, second paragraph). It would have been prima facie obvious to use reverse transcriptase, SuperScript for making cDNA molecule.

The response does not have a specific argument for the rejection. Thus, with the same reasons as set forth above, the rejection is maintained.

Summary

3. No claims are allowable.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joyce Tung whose telephone number is (571) 272-0790. The examiner can normally be reached on Monday - Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joyce Tung J. T.
November 25, 2006

KENNETH R. HORLICK, PH.D
PRIMARY EXAMINER

11/27/06